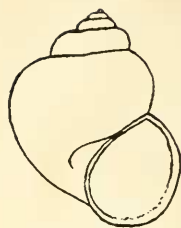
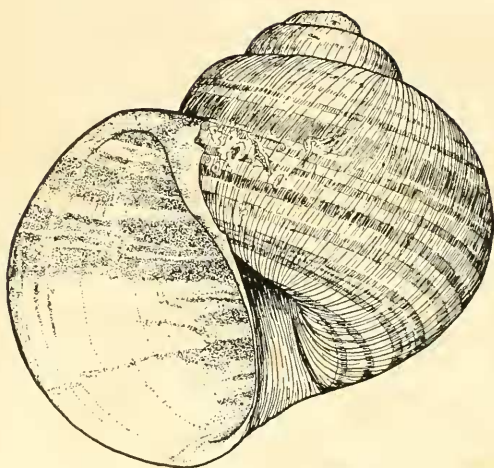


2



3



1



4



5

country, but generally avoid the forest belt of the lowlands. In the rain forest they are, with very few exceptions, only met with in ponds and ditches near human settlements.

The two unionids (*Hyria* and *Prisodon*) were obtained in the market at Pará, where they were offered for sale as a local remedy against eye sore; the pearly inside of the mussel being scraped off and mixed with water.

NEW SPECIES OF FRESH-WATER OPERCULATES

BY BRYANT WALKER

I

LANISTES PILSBRYI n. sp. Pl. 1, fig. 1.

Shell large, thin, globose-conic, umbilicate; whorls about six, the last greatly inflated, flattened and obtusely shouldered above, rounded below and without any angulation around the umbilicus; spire conic, obtuse and with a sharp carina on the shoulder of the two apical whorls; yellow with many spiral bands of greenish-brown, wider and more numerous on the upper part of the whorl, apical whorls dark brown; surface smooth with fine, regular lines of growth and covered with a minute, close, somewhat irregular spiral sculpture, scarcely visible to the naked eye, which as it cuts the lines of growth gives a granular appearance to the surface when examined under a glass; aperture large, a little oblique, suboval, wider below, interior white showing the color bands; lip sharp, quite regularly rounded on the outer margin, drawn back and only slightly curved on the inner. Operculum unknown.

Type (apex eroded) alt. 62, major diam. 64.4, minor diam. 50.3; aperture alt. 49, diam. 35.1 mm. An immature shell with five whorls and a perfect apex measures, alt. 43.2, major diam. 38.4, minor diam. 35.3 mm.

Type locality, So River, Ebolowa, Cameroon.

Types No. 73451, Coll. Walker. Paratype in the collection of the Philadelphia Academy.



This fine species is more nearly related to *L. intortus* Lam. which also occurs at Ebolowa than to any other, but differs in being nearly twice as large and in the greater development of the spiral sculpture.

As shown by the figure the upper whorls of the type are entirely eroded, the description of the apical whorls is drawn from the smaller specimen indicated above, the description is therefore a composite one.

I take pleasure in naming it after Dr. H. A. Pilsbry, who has kindly compared the cotypes with the other species of *Lanistes* in the collection of the Academy.

I am also indebted to Miss Mina L. Winslow of the Museum of Zoology, University of Michigan, for the admirable drawing of the type.

II

AMNICOLA WINKLEYI MOZLEYI n. v. Pl. 1, figs. 2-3.

Shell ovate-conic, umbilicate; whorls five, very convex, the penultimate roundly shouldered; suture deep; bleached white; growth lines scarcely visible; apex small, acute and projecting; aperture broad ovate; peristome continuous, shortly appressed to the parietal wall.

Length (fig. 2, male) 4.6, diam. 3.5, length of aperture 2.25 mm.

Length (fig. 3, female) 4.25, diam. 3.5, length of aperture 2.25 mm.

Type locality. A clay bank, Winnipeg, Manitoba.

Types No. 81978 Coll. Walker. Paratypes in the collections of Alan Mozley, The Philadelphia Academy and the University of Illinois.

This form is closely related to *A. winkleyi* Pils., but differs in being a little longer and much more inflated, the roundly shouldered penultimate whorl is characteristic, the umbilicus is larger and the apex more acute.

It is quite different from *A. winkleyi leightoni* Baker, which has the last whorl more depressed, a wider umbilicus and lacks entirely the shouldered penultimate whorl.

Whether it should be considered a distinct species, closely related to *winkleyi* or attached to it as a variety is largely a matter of individual opinion, but on the whole the conservative view seems more advisable.

As usual in the *Amnicolidæ* there is a considerable difference in the amount of inflation, as shown by the figures, which is probably sexual.

Named after the collector, Mr. Alan Mozley.

I am indebted to both Dr. Pilsbry and Mr. F. C. Baker for assistance in determining its systematic position.

III

AMNICOLA (ALOCINMA) ANNANDALEI n. sp. Pl. 1, fig. 4.

Shell ovate-conic, rimate; whorls 4.5, strongly convex; suture deeply impressed; greenish corneous, darker above and becoming nearly white in the umbilical region; surface smooth, polished and with very delicate lines of growth; apex rather acute; aperture ovate, rounded above and nearly vertical; peristome continuous, slightly thickened throughout, the outer margin somewhat doubled, the inner layer forming a ledge for the reception of the operculum, which can not be withdrawn into the aperture, the inner closely appressed to the body-whorl its entire length; columella a little incurved. Operculum ovate, semi-transparent, broadly rounded below and bluntly pointed above, concentric, with a small, spiral, subcentral nucleus, which is nearer to the inner than to the outer margin.

Length 4.5, width 3 mm. Operculum length 2.25, width 1.5 mm.

Type locality, Taichu Province, Formosa.

Type No. 80026 Coll. Walker. Paratype in the Indian Museum, Calcutta.

A few specimens of this species were found in a sending of *Blanfordia formosana* P. & H. Not being able to approximate it to any of the described species, a specimen was sent to the late Dr. N. Annandale of the Indian Museum, Calcutta, who pronounced it to be undescribed, and I take great pleasure in associating his name with it.

The subgenus *Alocinma* was established by Annandale and Prashad in 1919 (Rec. Ind. Mus., XVIII, p. 25) for the reception of a small group of Indian species, which in the characters of the shell and radula are similar to *Amnicola*, s.s., but differ in having a thick, calcareous, subhyaline operculum with a small, spiral nucleus.

The present species is more elevated than its congeners and in general shape resembles the *A. winkleyi* Pils., of New England.

As usual in the *Amnicolidæ*, some of the specimens are more obese than the type (a male?) and probably represent the female phase.

IV

PALUDESTRINA BOTTIMERI n. sp. Pl. 1, fig. 5.

Shell minute, oblong-conic, perforate; whorls four, not much inflated, body-whorl large, equalling $\frac{3}{4}$ of the length, its sides somewhat flattened, nearly parallel; suture impressed; greenish horn-color; surface smooth, lines of growth scarcely visible; apex obtuse, the apical whorl scarcely projecting above the second; aperture oval, rounded below and angled above; peristome sharp, continuous, the upper part appressed to the parietal wall.

Length 2, diam. 1.25 mm.; aperture length 1, diam. .75 mm.

Type locality, Glen Echo, Montgomery Co., Md.

Type No. 82099 Coll. Walker. Paratypes in the collections of W. J. Clench and L. J. Bottimer.

This little species, one of the smallest of the Eastern American *Paludestrinæ*, differs from the recently described *P. truncata* Van. in its smaller size, more inflated shape and obtuse, entire apex.

I am indebted to Mr. Clench for the opportunity of describing the species and at his request have named it after the discoverer, Mr. Bottimer.